



European Parliament Forum on Recreational Fisheries and Aquatic Environment

REPORT

Climate change impact on recreational fisheries: building resilience

Co-chaired by MEP Franc Bogovič and MEP Niclas Herbst

7 September 2021

16:00 – 17:30

Videoconference

Introduction

MEP Niclas Herbst (Germany, EPP), Chair of the RecFishing Forum, opened the meeting by recalling that under the Green Deal all sectors are expected to take part in the fight against climate change. They must prepare and adapt to it, and mitigate its impacts. For the recreational fishing sector, this means **better understanding how climate change impacts seas and rivers**, fish stocks and ecosystem balances, and how to best prepare the sectors and communities that depend on the aquatic environment. He clarified that, as some species will move away from their traditional fishing grounds, some will develop faster and some will even be threatened by their changing environment, **new activities will need to be developed** to respond to such phenomenon and these might represent new income sources for rural, coastal and remote communities. He referred to the development of **angling tourism** in those communities as a potential solution, which was the topic of a previous RecFishing Forum event.¹ He then highlighted that **climate change has a direct impact on marine species, and as such has ramifications for the Common Fisheries Policy** and fisheries management. By the end of 2022, the Commission is expected to prepare a report on the implementation of the Common Fisheries Policy and to consider the impact of climate change in this context. He concluded by referring to the necessity to **better integrate the climate change's impacts into European policies**, such as fisheries management or the roll-out of the Biodiversity Strategy.

MEP Franc Bogovič (Slovenia, EPP) mentioned the last report of the United Nations Intergovernmental Panel on Climate Change (IPCC)² and its key findings:

- **Climate change is intensifying the water cycle.** This brings more intense rainfall and associated river flooding.

¹ European Parliament Forum on Recreational Fisheries and Aquatic Environment, [How can angling contribute to the recovery of the EU tourism sector?](#), 16 July 2020.

² IPCC, 2021: Summary for Policymakers. In: *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)]. Cambridge University Press. In Press.



- Coastal areas will continue to see **sea level rise** throughout the 21st century, contributing to **more frequent and severe coastal flooding** in low-lying areas and coastal erosion. **Extreme sea level events** that previously occurred once in 100 years could happen every year by the end of this century.
- Changes to oceans and rivers, including warming, more frequent heatwaves, acidification, changes in river streams, habitat loss, and reduced oxygen levels **affect both the marine and freshwater ecosystems and the people that rely on them.**

“Climate change is one of the direct drivers of biodiversity loss.” – MEP Franc Bogovič

To counter these effects, he thus highlighted the **importance of adaptation and mitigation activities to help rural, coastal and remote communities build their climate resilience.** Such activities should involve protecting, restoring and sustainably managing ecosystems. He concluded his remarks by highlighting the work of the European Parliament to rise to the occasion and overcome this challenge, notably through its resolution on climate change or its upcoming work on the Fit for 55 package.

Presentations introduced by MEP Niclas Herbst

I. Alpine waters

A. Warmer river water – an overlooked factor affecting fish

Marijan Govedič (Director, Centre for Cartography of Fauna and Flora) said that, thanks to the anglers, data was widely available about the historic distribution of cold-water freshwater fish species in Slovenia. Drawing on this data and subsequent trends, he explained that the distribution and shifts in stocks could be explained both by visible changes (*e.g.* regulations, water regime) and invisible changes (*e.g.* chemical compounds, hormones, oxygen, temperature). In particular, he highlighted that the **water temperature can have a huge effect on fish:** it can affect its tolerance, mortality, growth, feeding, reproduction, *etc.* and ultimately its distribution and density, affecting at a larger scale the biodiversity.

“If there is a high water temperature during an August afternoon, it is enough for all the fish to die.” – Marijan Govedič

He then explained that over the past decade the water temperature of Slovenian rivers has gone up by 2°C on average. However, he clarified that the average should not be the only factor taken into account when referring to water temperature: **the maximum temperature is the most important factor**, as even if it only happens a few hours over 365 days, it will affect fish stocks.

Building on the example of the Sava River, which had a maximum temperature of 18°C in the 1950s and has now a maximum temperature of 26°C as registered in 2015 and 2016 close to the Croatian border, he focused on the twofold human impact on rivers: **changes to the riverbed morphology** (*e.g.* size, depth, length, gravel abstraction) and **to the riverbank vegetation.** To build resilience, it is thus of the utmost importance to look at the river not only as a simple channel but also to **take into account**



the wider river, i.e. the riparian zone (wider section including riverbanks) **and the alluvial aquifer** (what is below the riverbed). This alluvial aquifer acts as a natural cooling system and as a buffer system to help building a natural resilience system and providing drinking water.

The warming of water in rivers can have multiple consequences on fish: **early spawning, higher growth rate, higher mortality, stress, decrease of activity, larger predation, etc.** He explained however that fish do not always follow the temperature, *i.e.* will not migrate northwards to cooler waters, changing the species' distribution and **creating "empty spaces."** He concluded by highlighting the **need for larger scale river restoration activities**, which focus on a wide range of factors and not only on the vegetation on riverbanks.

B. What role for recreational fishers to mitigate the impacts of climate change

Igor Miličić (Secretary General, Fishing Association of Slovenia) started his presentation by highlighting the importance of the Alpine waters for many emblematic fish species for anglers, such as Danube salmon, brown trout and grayling. He explained that **flyfishing based tourism** is an important activity in Slovenia and provides a **high revenue for the local communities**.

Climate change however has consequences on both fish stocks and the communities relying on them: droughts means low water levels and warmer water temperatures, leading to stress for fishes and increase of water-based habitats use; while floods can crush or flush away fish and represent a danger to human life. He explained that the **government's response already exists but is too short-sighted**. The immediate solution found by local authorities is to widen and straighten rivers, but by doing so, it destroys or removes the riparian vegetation, **leading to a loss of habitat, cover and food sources for fish**. Furthermore, there are **competing interests towards river management**: in Slovenia, the Ministry for Infrastructure wants to avoid more floods while the Ministry of Agriculture wants to increase the number of fishing licences.

"Involving anglers is key to ensure that policy-making is sound and logical. We need more anglers involved in river management." – **Igor Miličić**

Echoing the previous presentation, he then explained the different water temperatures at which different fish species begin to die. In particular, he pointed out that the **practice of catch and release** for freshwater species in the Alpine waters **could be considered lethal when water temperatures rise above 18 °C**, in which case it is better to remove the fish from rivers. He also explained that the increase in temperature could lead to an increase in fish diseases.

He then highlighted the clear link between the protection of fish habitats and flyfishing tourism: **a significant habitat reduction would lead to a loss of important revenues for the local tourism**. Talking about the future of such tourism in Slovenia, he wondered how angling tourists would adapt to the loss of salmonid species. In conclusion, he presented some of the possible mitigation measures already adopted by anglers, such as restocking activities of juvenile fish or further angling restrictions. He however warned that more **restoration actions were needed**, not only on the rivers themselves but **also in terms of riparian growth**.



// Stock shifts in the North Sea: challenges and opportunities

David Mitchell (Chair of the Sea Subgroup, European Anglers Alliance) recalled the socio-economic importance of the marine recreational fishing sector in Europe, generating €10.5 billion each year and supporting more than 100,000 jobs in coastal and remote areas. Focusing on the climate change impacts on the marine ecosystems, he presented a case study on the North Sea, which is warming faster than the global average, acting as a bell weather for climate change. He explained that **around two-third of North Sea fish species have already shifted**, either in terms of latitude (northwards) or depth.

To illustrate the impacts of climate change on North Sea anglers, he presented four examples of threats and opportunities in the North Sea:

- **Cod**: this iconic species for anglers is now all but completely absent in the southern North Sea due to an increase of acidity and warmer temperatures.
- **Mackerel**: similar to cod, the species is going further north, affecting the whole North Sea food chain.
- **Seabass**: given that the seabass range is expanding, this creates **new opportunities for anglers to fill in the gap left behind by cod**, such as in Scotland.
- **Bluefin tuna**: the species moves northwards in vast numbers and can now be fished on the coast of Norway, Sweden or Denmark. It moves due to the changing currents, following its food source. This can also present an **important opportunity for angling tourism**.

He then speculated on what could come next: bream is starting to appear in the English Channel, as is red mullet. Both species could offer opportunities to fill in the ecological niche left open by cod, but also opportunities in terms of employment and jobs for coastal communities. **Anglers will have to adapt to these changes in stock distribution.**

Referring to the extreme weather events, he explained that they will have an impact on the anglers' participation: the **practical implications of rougher seas means less opportunities to go out fishing at sea**. He concluded by reiterating that anglers are very aware of the fact that the distribution of fish stocks is changing very quickly. These changes will have a significant impact on the sector, thus **more research is needed in order to understand and mitigate the climate change impacts** and to adapt to changes that cannot be prevented.

"Better data on stocks status will be necessary to pro-actively and effectively manage fisheries in the future."
– **David Mitchell**

Debate with the audience

David Vertegaal (Marine Public Affairs Officer, Sportvisserij Nederland) referred to the floods in Europe over the summer and the need to make rivers safer. He however underlined the possibilities to do so by restoring the rivers' original natural functions to benefit fish species specifically and



biodiversity in general. The two goals should be combined so that rivers can be part of the natural buffer functions of catchment areas.

Fred Bloot (President, European Anglers Alliance) said that the presentations highlighted the main differences between the marine and freshwater ecosystems. He added that the situation appears to be much more worrying in rivers, where distribution shifts are more drastic and may be irreversible. He asked the panellists what could be done to rebuild river basins. **Marijan Govedič (Director, Centre for Cartography of Fauna and Flora)** recognised that Slovenia appears to be focusing exclusively on solving the problems around floods at the moment and that there is no mitigation actions against droughts. **Igor Miličić (Secretary General, Fishing Association of Slovenia)** added that he is seeing some changes in the general thinking in terms of river management, towards habitat protection.

Conclusions

Olivier Portrat (CEO, EFTTA) wrapped up the key messages from the meeting as follows:

- In the Atlantic, the marine ecosystems are already heavily impacted with stocks shifting northwards (*e.g.* mackerel, cod). This means that anglers will have to adapt to new species or change fishing grounds, creating further opportunities for coastal or remote communities.
- In the Alpine waters, droughts and floods affect fish stocks and habitats. Anglers face similar challenges as in the Atlantic. The growth of non-native species, such as catfish in Western Europe, should be welcomed by anglers.
- Predation on fish stocks also augments due to climate change: initially migrating birds such as herons, cormorants and goosanders are now becoming sedentary, greatly impacting fish stocks they feed from.
- **Anglers are taking their role seriously**, accepting further regulations and restrictions, but also proactively, such as through habitat restoration or restocking activities.
- There is a **need to mainstream climate change adaptation** and to understand its impacts **at all political levels**, including in the different European Commission services.
- **Funding** from the EU must be made available for **research**.

MEP Niclas Herbst (Germany, EPP), Chair of the RecFishing Forum, concluded the meeting by reiterating that European policies, such as a well-made Water Framework Directive, and EU funding are part of the solution. Even though, a lot needs to be done for the communities relying on fish, through mitigation or adaptation measures.

“We know that anglers are a big part of the solution. Who else could do it if not the recreational fisheries sector?” – MEP Niclas Herbst

During the concluding remarks, participants were invited to propose **a word to share their key takeaways from the meeting**. The result may be found overleaf:

